

REMARKS

Claims 1, 5-8, and 11-26 are pending in the application. No claims have been amended. The drawing has been amended to add a new figure to illustrate disclosed subject matter. Further, the specification has been amended to recognize the new figure. No new matter has been introduced by the amendment.

Specification Objection Under 35 U.S.C. §132(a)

The Examiner has objected to the applicants' specification amendment and additional drawing figure presented in the applicants' response of September 11, 2009. The Examiner asserts that the additional FIG. 7 and the corresponding specification amendment constitute new matter to the application.

The additional FIG. 7 illustrates the result of partially forming the sacrificial layer 3, or partially removing a portion of the sacrificial layer 3, to form the non-continuous sacrificial layer. The applicants' amendment of their specification merely recognizes the additional figure in the specification text that describes the condition illustrated in FIG. 7. The applicants assert that their specification discloses a process in which the structure illustrated in FIG. 7 is realized. Accordingly, new matter is not presented by the addition of FIG. 7, in view of the support provided in both their original U.S. application and their French priority application.

The Examiner refers to the applicants' reference to surface layer processing as grounds to question the disclosure of a plate in which the roughed surface is exposed by the sacrificial layer. (Office Action, pg. 2). In the disclosed embodiment, the surface layer has a roughened surface. (Substitute Specification pg. 15, lines 15-20). The sacrificial layer is deposited over the surface layer, and the sacrificial layer is selectively etched to expose the roughened surface layer. (Substitute Specification pg. 16, lines 3-10). The applicants then describe that this is one embodiment in which the surface of a plate is structured. (Substitute Specification, pg. 16, lines 11-17). The specification further describes that

"[i]t is clear that a non-continuous sacrificial layer may be obtained, for example by localized deposition or by etching; this enables areas already opened up to be defined in the stacked structure." (Substitute Specification, pg. 16, lines 26-29).

Accordingly, the applicants describe a process embodiment in which the stacked structure is made by bringing the plates together where one of the plates has a surface layer overlying the plate, and this surface layer is exposed by selective etching of the sacrificial layer. As shown above, the applicants further describe the same process, but without the surface layer.

The foregoing notwithstanding, the applicants further assert that their original claims recite a method in which a non-continuous sacrificial layer is formed. Original claim 1 appears in the applicants' certified English translation of their priority French patent application, now of record in the instant application and filed on November 14, 2007. Claim element b) of original claim 1 is relevant to the written description rejection. Element b) of claim 1, as it appeared in the applicants' priority French patent application No. 0308865 application and in their corresponding PCT application No. PCT/FR04/01858, is reproduced below.

b) a sacrificial layer (3; 8) is produced on at least a portion of the surface (2) of the first plate (1) and/or the surface (7) of the second plate (5)

The applicants assert that the claim language set forth above is not ambiguous and describes the structure illustrated in FIG. 7. Their original claims recognize that only a portion of the sacrificial layer can be produced on the first or second plate. As noted in MPEP §2163.03, "there is a strong presumption that an adequate written description of the claimed invention is present in the specification as filed. *In re Wertheim*, 541 F.2d 257, 262, 191 USPQ 90, 96 (CCPA 1976). Consequently, rejection of an original claim for lack of written description should be rare."

In support of the applicants' assertion that new matter is not introduced by their amendment, the applicants submit herewith the Rule 132 Declaration of Dr. Renard. In the attached Declaration, Dr. Renard establishes that one skilled in the art would comprehend the subject matter disclosed in the specification to describe the structure illustrated in FIG. 7. (See, Renard Declaration, ¶¶ 5 et seq.).

In view of the disclosed process and the explicit claim language in their original application, and in view of the attached Declaration, the applicants assert that new

matter is not introduced by FIG. 7 and the corresponding specification amendment. The Examiner's objection is overcome and entry of the amendment is respectfully requested.

Rejection Under 35 U.S.C. 112, first paragraph

Claims 1, 5-8, and 11-26 have been rejected for allegedly failing to be supported by a written description of the invention. The applicants assert that this rejection is in error in view of the support for claim 1 provided in their specification. The applicants further assert that claim 1 is patentable over the cited references.

Claim 1 recites that the method includes "a step of at least partly eliminating the sacrificial layer such that the surface portion at least partially faces the second plate." The Examiner acknowledges that the instant specification contains support for "at least partially eliminating the sacrificial layer," but the Examiner asserts that support is lacking for the remainder of the claim element in which "the surface portion at least partially faces the second plate." (Office Action, pg. 4). In support of this position, the Examiner points to FIG. 4 of the applicants' drawing as somehow foreclosing an embodiment in which the sacrificial layer 3 is partially removed to expose the underlying surface prior to bonding the first and second plates together. The Examiner further disputes the applicants' interpretation of the term "faces" that appears in the cited passage of claim 1. (Office Action, pg. 5-6).

The applicants' previous extensive remarks regarding the specification support for the subject matter of claim 1, notwithstanding, the applicants refer to the Rule 132 Declaration of Dr. Renard submitted herewith. In his Declaration, Dr. Renard describes a number of aspects related to MEMS device structure and processing. (Renard Declaration, ¶¶ 7-10). Further, Dr. Renard summarizes the problems addressed by the applicants' inventive method, and cites several portions of the applicants' specification that describe the claimed process. (Renard Declaration, ¶¶ 11-14). Upon review and analysis, Dr. Renard states that the disclosed process results in a situation in which "when the two silicon plates are bonded together, the sacrificial layer will not extend entirely across the interface between the two plates. Because the sacrificial layer is

either selectively formed in certain regions, or portions are removed, the silicon surfaces of the plates will be exposed to each other in certain areas of the interface." (Renard Declaration, ¶ 15). Thus, Dr. Renard concludes that he understands "the meaning of the term 'faces' as it appears in the application as describing a situation in which, because at least part of the silicon oxide layer has been removed, and the structured surface of one plate is open to the other plate, without any intervening layer between the two plates." (Renard Declaration, ¶ 16).

The applicants assert that, as set forth in Dr. Renard's Declaration, one skilled in the art would understand the meaning of the word "faces" as used in the applicants' specification and claims. The phrase "the surface portion at least partially faces the second plate" in claim 1 is understood to mean that the surface portion is opposite to the second plate and the plates are arranged without any intervening structure, as described above. Accordingly, the applicants assert that one of skill in the art would understand their claims to recite a method in which the roughed portion of the first plate is opposite to the second plate, with a space, or in other words, no intervening structure between the roughed portion of the first plate and the second plate.

The applicants assert that claims 1, 5-8, and 11-26 recite inventive subject matter fully supported by their original specification in compliance with 35 U.S.C. §112, first paragraph. In view of the written description provided by the applicants' specification, there is no basis for the instant rejection and the applicants respectfully request that the rejection be withdrawn.

Rejection Under 35 U.S.C. 102(b)

Claim 26 has been rejected over Shimada et al. This rejection is overcome in view of the following remarks.

Shimada et al. disclose a first substrate (1) having a peeling layer (4) overlying the substrate surface and the dents (3) in the surface. A light blocking layer (5) partially covers the peeling layer. A second substrate (8) has a mask layer (10) covering a discontinuous surface, and a bonding layer (7) partially covering the mask layer. In the bonded structure illustrated by Shimada et al. in FIG. 1E, the peeling layer (4) and the

mask layer (10) remain on facing surfaces of their respective substrates. Shimada et al. do not suggest or disclose at least partially removing either the peeling layer or the light blocking layer. Accordingly, Shimada et al. fail to suggest or disclose a roughed surface portion that at least partially faces the second plate.

In the context of claim 1, the term "faces" necessarily means that the roughed portion of the first plate is opposite to the second plate, with no intervening structure between the roughed portion of the first plate and the second plate. Accordingly, the claimed method differs from the prior art methods in which a sacrificial layer is planarized or surface portions are globally etched away. Shimada et al. do not disclose at least partially eliminating a portion of a sacrificial layer to expose the surface portion, as recited by claim 1. Accordingly, Shimada et al. do not suggest or disclose a structure in which a roughed surface portion at least partially faces the second plate.

The applicants have made a novel and non-obvious contribution of the art of stacked structure device fabrication. The claims at issue distinguish over the cited references and are in condition for allowance. Accordingly, such allowance is now earnestly requested.

Respectfully submitted,

/Jasper W. Dockrey/

Jasper W. Dockrey
Registration No. 33,868
Attorney for Applicant(s)

BRINKS HOFER GILSON & LIONE
P.O. BOX 10395
CHICAGO, ILLINOIS 60610
(312) 321-4200